



DIAGNOSTIC ACCURACY OF FINE NEEDLE ASPIRATION CYTOLOGY OF MALE BREAST LESIONS KEEPING HISTOPATHOLOGY AS GOLD STANDARD

Baba Iqbal Khaliq*	Assistant professor department of Pathology Government Medical college Baramulla union territory of Jammu and Kashmir 193103. *Corresponding Author
Ishrat Qureshi	Laboratory Technician department of Pathology Government Medical college Baramulla union territory of Jammu and Kashmir 193103.
Lateef Ahmad Wani	Professor department of Pathology Government Medical college Srinagar union territory of Jammu and Kashmir 190010.

ABSTRACT **Background:** FNAC is widely used and well established diagnostic method, used worldwide in the diagnosis of breast lesions or lumps in females. However, studies related to application of FNAC in male breast lesions or lumps are rare. This study was done to evaluate role, sensitivity, specificity and diagnostic accuracy of FNAC in male breast lesions keeping histopathology as a Gold standard.

Aim and objective : Aim of this prospective study was to know the sensitivity ,specificity and diagnostic accuracy of FNAC in male breast lesions keeping histopathology as gold standard.

Material and Methods: This study was prospective study done over period of two years from 1st march 2019 to 31st march 2021 in the department of pathology Government Medical College Baramulla. FNAC of male patients presenting with breast lesions was done and results were recorded as Benign, Malignant and Inflammatory lesions. Cytopathological results were correlated with histopathological results except in inflammatory lesions where biopsy was not taken as it resolved on medical treatment. Statistical analysis was done for sensitivity, specificity and diagnostic accuracy using standard statistical tools.

Results: In this study 36 FNAC,S were done on male breast lesions or lumps over a period of two years, 05 (13.88%) patients presented with bilateral breast lump and 31 (86.11%) patients presented with unilateral breast lump. Out of 31 patients with unilateral breast lesion 19 (61.29%) patients presented with left sided breast lesion and 12 (38.70%) patients presented with right sided breast lesion. Age ranged from 12 years to 83 years with 07 patients being in the age group of 21 to 30 years and 07 in the age group of 41 to 50 years. The aspirates were categorized into 3 groups as Benign, Malignant and inflammatory lesions. . Out of 36 patients 32 cases were diagnosed as benign on cytopathology, 03 cases were diagnosed as malignant and 01 case as inflammatory(abscess). Histopathological correlation was done in 35 cases and it coincided with cytopathological findings. In one inflammatory case histopathological correlation was not done as it resolved on medical treatment and biopsy was not taken. In this study both sensitivity and specificity of FNAC on male breast lesions was 100%. Hence high diagnostic accuracy.

Conclusion : FNAC is highly sensitive and specific diagnostic tool for the assessment of breast lesions in male patients. The routine use of FNAC and immediate screening of unstained slides for adequacy of material will greatly reduce the number of unnecessary biopsies and frozen sections for histopathological evaluation. once adequate material is aspirated FNAC may prove to be highly reliable, sensitive, specific, cost effective and rapid diagnostic tool for early and accurate diagnosis of male breast lesions. Hence, we strongly recommend the routine use of FNAC as the first-line investigation in the clinical evaluation of male breast lesions.

KEYWORDS : Malignant, Benign , Ductal Carcinoma, Gynaecomastia, FNAC.

INTRODUCTION:

Fine needle aspiration cytology is a quick, accurate and cost effective method in the diagnosis and management of various lesions. Fine-needle aspiration of the breast is being used increasingly in the preoperative assessment of breast lesions. Most studies, however, were dominated by the large number of female breast lesions, with the male breast lesions representing less than 1% of the studied cases.^{1,2} Gynecomastia is the most common cause of benign breast lesion in the male breast. Male breast cancer is rare but it is associated with an aggressive clinical course.³ Although histopathologic examination is a sure means of distinguishing gynecomastia from carcinoma, it is both impractical and unnecessary to perform a biopsy on all patients with gynecomastia.⁴ Studies show that use of fine needle aspiration cytology(FNAC) can allow diagnosis to be made with a sufficient degree of confidence which can spare the patients from an invasive surgical procedure.⁵

AIM AND OBJECTIVE :

Aim of this prospective study was to know the sensitivity ,specificity and diagnostic accuracy of FNAC in male breast lesions keeping histopathology as Gold standard.

MATERIAL AND METHODS:

This study included the male patients who presented to department of pathology Government Medical College Baramulla with breast lump or breast swelling for FNAC over the period of two years from 1st march 2019 to 31st march 2021 . FNAC of male patients presenting with breast lesions was done after explaining the procedure to the patients and results were recorded as Benign, Malignant and Inflammatory lesions. The aspirates were obtained using 21 gauge needle and 20 ml. syringe attached to Franzen FNAC handle . In 05 cases FNAC was repeated as cellularity of aspirate was not adequate to

reach to a conclusive diagnosis. Air dried and wet fixed smear were prepared as per the standard procedure. Air dried smears were stained with May grunwald giemsa stain and wet fixed smears in 95% ethyl alcohol were subsequently stained with Papanicolaou stain. FNAC diagnosis was categorized as - Benign lesions (Gynecomastia, Lipoma, Benign cystic lesions), Malignant lesions (Ductal carcinoma) and Inflammatory lesions (abscess). Histopathological correlation was done in all cases except inflammatory lesion where biopsy was not taken as it resolved on medical treatment . All other cases where histopathology was not done where excluded from the study . Statistical analysis was done for 35 cases where histopathology was available using standard methods for sensitivity, specificity and diagnostic accuracy.

RESULTS:

In this study 36 FNAC,S were done on male breast lesions or lumps over a period of two years, 05 (13.88%) patients presented with bilateral breast lump and 31 (86.11%) patients presented with unilateral breast lump. Out of 31 patients with unilateral breast lesion 19 (61.29%) patients presented with left sided breast lesion and 12 (38.70%) patients presented with right sided breast lesion. Age ranged from 12 years to 83 years with 07 patients being in the age group of 21 to 30 years, 07 in the age group of 41 to 50 years, 06 patients in the age group of 31 to 40 years and 05 patients each in the age group of 51 to 60 and 61 to 70 years, 03 patients were in the age group of 11 to 20 years, 02 patients in the age group of 71 to 80 years and 01 patient in the age group of 81 to 90 years. The aspirates were categorized into 3 groups as Benign, Malignant and Inflammatory lesions (Table A). Out of 36 patients 32 cases were diagnosed as benign on cytopathology, 03 cases were diagnosed as malignant and 01 case as inflammatory (abscess). Histopathological confirmation was done in 35 patients. In 01 case (inflammatory) biopsy was not taken as it resolved on medical

treatment. Age of patients diagnosed as Malignant (infiltrating duct carcinoma) was 60 years, 65 years and 71 years . Histopathological correlation was done in 35 cases and it coincided with cytopathological findings. In one inflammatory case histopathological correlation was not done as it resolved on medical treatment and biopsy was not taken. In this study both sensitivity and specificity of FNAC on male breast lesions was 100%. Hence high diagnostic accuracy.

DISCUSSION :

This study was conducted on 36 male patients presenting with breast lump. Maximum number of cases were seen in the age group of second and fourth decade followed by third and fifth decade. Russin et al⁶ observed bimodal peak in the third and seventh decades. The youngest patient in this study was 12 year boy while oldest was 83 year old man, these findings are similar to studies by Chide P.M et al⁷. In this study 05 (13.88%) patients had bilateral swelling and 31 (86.11%) patients had unilateral swelling, this was similar to studies by Russin et al⁶ and Chide P.M et al.⁷ Martin Bates et al⁸ found a near total unilateral involvement in their study.

In our study, out of 36 cases 30 (83.33%) had Gynaecomastia and Gynaecomastia was more frequent in the left side than right side. Out of 31 patients with unilateral breast lesion 19 (61.29%) patients presented with left sided breast lesion and 12 (38.70%) patients presented with right sided breast lesion. This was similar to the studies conducted by Das et al⁵ and Martin-Bates et al⁸ who observed it more in the left breast.

In our study cellularity of aspirate was adequate in 31 (86.11%) cases, 05 patients needed repeat aspiration. This was similar to studies conducted by Russin et al⁷ where cellularity of aspirate was adequate in 86% of cases, whereas Das et al⁵ found it adequate in 96.2% of cases.

Carcinoma in male breast is rare as compared to the female breast. In present study 3 (8.33%) cases were diagnosed as ductal carcinoma. Macintosh et al¹⁰ observed similar finding 7.9% ductal carcinomas in male breast in their study.

In The present study sensitivity was 100%, this was similar to study by Wauters et al.⁹ Studies by Siddiqui et al³ show sensitivity of 95.3%, MacIntosh et al show 95.5%.¹⁰ and Westend et al¹¹ show 87% respectively. Specificity of the present study was 100%, this is in similarity with studies by Siddiqui et al,³ Chide P.M et al.⁷ and MacIntosh et al.¹⁰ Study by Wauters et al⁹ show specificity of 92.2%, while study by Westend et al¹¹ show specificity of 78%.

Table A-Cytopathological and Histopathological diagnosis of male breast lesions.

S. No	category	Cytopathologic Diagnosis	No. of cases	Histopathological diagnosis	No. of cases
1.	Benign	Gynaecomastia	30	Gynaecomastia	30
2.	Benign	lipoma	01	Lipoma	01
3.	Benign	Benign cystic lesn	1	Benign cystic lesion	01
4.	Malignant	Ductal carcinoma	03	Infiltrating ductal carcinoma	03
5	Inflammato-ry	Abscess	01	Not done	00

CONCLUSION:

FNAC is highly sensitive and specific diagnostic tool for the assessment of breast lesions in male patients. The routine use of FNAC and immediate screening of unstained slides for adequacy of material will greatly reduce the number of unnecessary biopsies and frozen sections for histopathological evaluation. once adequate material is aspirated FNAC may prove to be highly reliable, sensitive, specific, cost effective and rapid diagnostic tool for early and accurate diagnosis of male breast lesions. Hence, we strongly recommend the routine use of FNAC as the first-line investigation in the clinical evaluation of male breast lesions.

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